

pressure exerted downward on the mouse 100, such as by the palm of a user. The mouse 100 also comprises a display 103 that shows the function being triggered by either button or the roller. The location of the display 103 is shown on one of the buttons, but could also be on both buttons, the lower part of the mouse 104 or any combination thereof.

[0096] It should also be understood that the roller 102 could be replaced by any sort of surface that is in communication with pressure sensors that can detect force of pressure being exerted downwardly on the mouse. Thus, an optical mouse can combine the optical surface on the underside of the mouse with a pressure sensor that can detect downward pressure on the mouse without interfering with the optical detection of movement of the mouse on a plane.

[0097] Other input devices of this invention may have a reduced number of input segments and a greater number of functions associated with each multifunctional input segment. FIG. 9 demonstrates that 23 multiple input segments in a device is sufficient to perform all of the functions typically performed by a standard 101 or greater key keyboard. Each of the multifunctional segments in this embodiment controls functions that are logically grouped together.

[0098] FIG. 10 demonstrates that by increasing the number of functions associated with each multifunctional input segment all of the functions typically performed by a standard 101 or greater key keyboard can be controlled by 13 to 15 keys. Again, each of the multifunctional segments in this embodiment controls functions that are logically grouped together.

[0099] FIG. 11 show a 12-key keyboard that produces all alphanumeric characters (including capital letters) and frequently used symbols and punctuation marks; and the associated character map. Keys 1 through 10, corresponding to each finger of two hands, are multifunctional and between them produce all of the characters and symbols. Thus, the outputting of any text is controlled without ever having to change the position of a finger. The other two keys correspond to a space bar and an Enter key and are controlled by the left thumb and the right pinky, respectively.

What is claimed is:

1. An input device in communication with a computer, said input device comprising a multifunctional input segment, wherein force of pressure exerted on said multifunctional input segment determines which function is outputted by said computer.

2. The input device according to claim 1, selected from a computer keyboard, a chorded keyboard, a keypad, a key-based control panel, a computer mouse, a trackball, a touchpad, a trackpad, a joystick, a pointing stick, a stylus, a light pen, a light gun, a cyberglove, a graphics tablet, a digitizing tablet, a touch screen, a gamepad, a joypad, a paddle, a floor pad, a Power Pad; an array of control buttons on an electronic device, a control panel in a vehicle, a stereo control panel, a radar detectors, a GPS device or a control panel in a flight controller.

3. The input device according to claim 2, selected from a computer keyboard, a touchpad, a touch screen or a mouse.

4. The input device according to any one of claims 1 to 3, wherein said multifunctional input segment is selected from a key, a button, a portion of a touch-sensitive device; a portion of an electronic stylus; a joystick, a joypad, a wheel, a finger of a cyberglove; or a finger, stylus or other pointing device used in conjunction with a video recorder that detects and distinguishes movement or with a motion detector.

5. The input device according to claim 4, wherein said multifunctional input segment is selected from a key, a button, a portion of a touch screen, a portion of a touchpad or a portion of an electronic stylus.

6. The input device according to claim 1, wherein said computer is selected from a laptop computer, a desktop computer, a workstation, a cell phone, PDA or a device that is a combination of one or more of the foregoing.

7. The input device according to claim 1, wherein the force of pressure exerted on the multifunctional input segment is detected by a pressure-sensing device in communication with said multifunctional input segment.

8. The input device according to claim 1, wherein the force of pressure exerted on the multifunctional input segment is mechanically manifested by physically depressing the multifunctional input segment to different depths and said input device additionally comprises a sensor that detects the depth to which said multifunctional input segment is depressed.

9. The input device according to claim 1, wherein the multifunctional segment comprises or is in communications with a deformable material and wherein the force of pressure is measured by the pressure of said deformable material.

10. The input device according to claim 1, comprising a plurality of multifunctional input segments, and wherein the force of pressure exerted on each multifunctional input segment is mechanically manifested by physically moving the multifunctional input segment in two or more different directions in a plane.

11. The input device according to claim 8, wherein the force of pressure exerted on said multifunctional input segment is further mechanically manifested by physically moving the multifunctional input segment in two or more different directions at each depth of depression.

12. The input device according to claim 1, wherein said device provides feedback indicative of the function being invoked by the force of pressure applied to the multifunctional input segment.

13. The input device according to claim 12 wherein said feedback is selected from audio feedback, visual feedback or haptic feedback.

14. The input device according to claim 13 wherein said feedback is haptic feedback.

15. The input device according to claim 14 wherein said haptic feedback is controlled by a solenoid in communication with said multifunctional input segment, said solenoid having a first position that is not detectable by a user contacting said multifunctional input segment, and a second position that is detectable by a user contacting said multifunctional input segment, said solenoid completing at least one cycle of moving from said first position to said second position and back to said first position in response to force of pressure exerted on said multifunctional input segment.

16. The input device according to claim 15, further comprising a pressure-sensing device in communication with said multifunctional input segment, wherein said pressure-sensing device detects the force of pressure exerted on the multifunctional input segment.

17. The input device according to claim 13 wherein said feedback is visual feedback, wherein all of the functions controlled by a multifunctional input segment are displayed on a display in communication with said input device when a force of pressure is exerted on said multifunctional input segment, and wherein the currently selected function is distinguishable from the non-selected functions on said display.